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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/993,938 | 11/06/2001 | Gordon Good | 13220.009001; P5844 | 5489 |
| 32615 | 7590 | 09/12/2005 | EXAMINER | |
| OSHA LIANG L.L.P./SUN 1221 MCKINNEY, SUITE 2800 HOUSTON, TX 77010 | | | CHOUDHURY, AZIZUL Q | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2145 | |

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-----------------------------|--|
| Office Action Summary | Application No. 09/993,938 | Applicant(s) GOOD ET AL. | |
| | Examiner Azizul Choudhury | Art Unit 2145 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>8/03 and 11/01</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

This office action is in response to the correspondence received on May 6, 2005.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 8 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "smallest" is a relative term. It is unclear as to what quantity or measurement qualifies as being "smallest."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Shakib et al (US Pat No: 5,787,262), hereafter referred to as Shakib.

1. With regards to claims 1 and 12, Shakib teaches a method for resolving updates in a directory server, comprising: generating at least one change sequence number associated with a first replica, wherein the change sequence number is a

tuple comprising: a timestamp, a sequence number, a replica identifier, and a subsequence number; creating a total ordering of operations by time using the change sequence number; extracting state information from an entry associated with an operation from the total ordering; and generating a replica update vector comprising the change sequence number; communicating the update vector to a second replica computing a new state for the entry using extracted state information and the operation associated with the entry ; generating a replica update vector comprising the change sequence number; communicating the replica update vector to a second replica; and determining the smallest set of updates to send using the replica update vector (Shakib teaches a distributed conflict resolution design. The design allows for update resolutions (column 7, line 55 – column 8, line 5, Shakib) (column 14, line 1 – column 15, line 35, Shakib). In addition, it allows for object information (change sequence number tuple) (column 15, lines 1-10, Shakib). The design also allows for creating total ordering operations by time (column 14, lines 49-50 and lines 63-66, Shakib) and extracting/computing state information from entries (column 9, lines 49-51 and column 3, lines 62-65).

2. With regards to claim 2, Shakib teaches the method wherein total ordering is enforced by a value resolution routine (column 14, lines 35-41, Shakib).

3. With regards to claim 3, Shakib teaches the method wherein state information is recorded for an attribute of the entry (column 15, lines 1-10 and column 3, lines 62-65, Shakib).
4. With regards to claim 4, Shakib teaches the method wherein state information is recorded for a value of the attribute (column 15, lines 1-10 and column 3, lines 62-65, Shakib).
5. With regards to claim 5, Shakib teaches the method further comprising: storing state information in the directory server (column 4, lines 34-37 and lines 46-56, Shakib).
6. With regards to claim 6, Shakib teaches the method further comprising: promulgating copies of data by update resolution procedure to a consumer server (column 4, lines 37-40 and lines 46-47, Shakib).
7. With regards to claim 7, Shakib teaches the method further comprising: promulgating copies of data by update resolution procedure to a supplier server (column 4, lines 37-40 and lines 46-47, Shakib).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettus (US Pat No: 6,360,266) in view of Shakib et al (US Pat No: 5,787,262), hereafter referred to as Pettus and Shakib, respectively.

8. With regards to claim 8, Pettus teaches through Shakib, a directory server comprising: a supplier server; a consumer server in communication with the supplier server; a plurality of pluggable services that manage replication of data contained within the directory server from the supplier server to the consumer server; and an update resolution procedure used to detect and resolve update conflicts between consumer servers, wherein the update resolution procedure utilizes a replica update vector to determine the smallest set of updates to communicate from the supplier server to the consumer server; wherein replication of data is managed using the update resolution procedure

(Pettus teaches a design with networked (communicating) servers with update resolution procedures (implicit in column 3, lines 22-25, see also column 8, lines 42-45, Pettus). In addition, Pettus' design allows for replication from one server to another (column 8, lines 28-30; and implicit in the multiple methods for

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updating in column 15, lines 18-22, Pettus). However, Pettus does not specifically teach the update resolution procedures.

Shakib discloses an update resolution procedure for use on distributed data objects (column 4, lines 24-33, Shakib).

Therefore, it would have been obvious to one skilled in the art, during the time of the invention, to have combined the update resolution procedure of Shakib's design with the servers of Pettus' design because Pettus explicitly states the need for a method of resolution in distributed systems (column 3, lines 38-45, Pettus)).

9. With regards to claim 9, Pettus teaches through Shakib, the directory server wherein the update resolution procedure uses an update resolution policy to detect and resolve update conflicts between consumer servers

(Pettus teaches a design with networked (communicating) servers with update resolution procedures (implicit in column 3, lines 22-25, see also column 8, lines 42-45, Pettus). In addition, Pettus' design allows for replication from one server to another (column 8, lines 28-30; and implicit in the multiple methods for updating in column 15, lines 18-22, Pettus). However, Pettus does not specifically teach the update resolution procedures.

Shakib discloses an update resolution procedure for use on distributed data objects (column 4, lines 24-33, Shakib). Shakib further discloses that the update

resolution procedure uses a policy to detect and resolve update conflicts (column 11, lines 38-41 and column 14, lines 35-41, Shakib).

Therefore, it would have been obvious to one skilled in the art, during the time of the invention, to have combined the update resolution procedure of Shakib's design with the servers of Pettus' design because Pettus explicitly states the need for a method of resolution in distributed systems (column 3, lines 38-45, Pettus)).

10. With regards to claim 10, Pettus teaches through Shakib, the directory server, wherein the update resolution procedure promulgates copies of data to the consumer server

(Pettus teaches a design with networked (communicating) servers with update resolution procedures (implicit in column 3, lines 22-25, see also column 8, lines 42-45, Pettus). In addition, Pettus' design allows for replication from one server to another (column 8, lines 28-30; and implicit in the multiple methods for updating in column 15, lines 18-22, Pettus). However, Pettus does not specifically teach the update resolution procedures.

Shakib discloses an update resolution procedure for use on distributed data objects (column 4, lines 24-33, Shakib). Shakib also discloses how update resolution procedure promulgates copies to the server (column 4, lines 37-40 and lines 46-67; see also Pettus: column 13, lines 6-8 and column 15, lines 15-17).

Therefore, it would have been obvious to one skilled in the art, during the time of the invention, to have combined the update resolution procedure of Shakib's design with the servers of Pettus' design because Pettus explicitly states the need for a method of resolution in distributed systems (column 3, lines 38-45, Pettus)).

11. With regards to claim 11, Pettus teaches through Shakib, the directory server wherein the update resolution procedure promulgates copies of data to the supplier server

(Pettus teaches a design with networked'(communicating) servers with update resolution procedures (implicit in column 3, lines 22-25, see also column 8, lines 42-45, Pettus). In addition, Pettus' design allows for replication from one server to another (column 8, lines 28-30; and implicit in the multiple methods for updating in column 15, lines 18-22, Pettus). However, Pettus does not specifically teach the update resolution procedures.

Shakib discloses an update resolution procedure for use on distributed data objects (column 4, lines 24-33, Shakib). Shakib also discloses how update resolution procedure promulgates copies to the server (column 4, lines 37-40 and lines 46-67; see also Pettus: column 13, 6-8 and column 15, lines 15-17).

Therefore, it would have been obvious to one skilled in the art, during the time of the invention, to have combined the update resolution procedure of Shakib's design with the servers of Pettus' design because Pettus explicitly states the

need for a method of resolution in distributed systems (column 3, lines 38-45, Pettus)).

Response to Remarks

The amendment received May 6, 2005 has been carefully reviewed but is not deemed fully persuasive. Along with the amended claims (which have now been provided a revised office action), the applicant's representative expresses two points of contention. The first point being the tuple, the applicant's representative feels that the prior arts do not support the tuple. The examiner however disagrees and points to column 15, lines 1-10 of the Shakib prior art. It is felt that the data object is equivalent to the claimed tuple. The second point of contention revolves around the replica updates and using the smallest set of updates. First, Shakib states how efficiency is needed (column 7, lines 38-46, Shakib). Shakib's design also allows for update resolutions (column 7, line 55 – column 8, line 5, Shakib) (column 14, line 1 – column 15, line 35, Shakib). It is clear to the examiner that when the disclosure is read fully, the design allows for updating vectors with the fewest steps possible. The examiner would also like to point out how it is unclear what the smallest set of updates is within the claimed design. No equation or measurement is claimed to clarify what is interpreted as being the smallest set of updates. In other words, it is obvious that a design would strive to be efficient and would try to minimize unnecessary steps, just as in Shakib's design.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action:

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Azizul Choudhury whose telephone number is (571) 272-3909. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Martin-Wallace can be reached on (571) 272-6159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AC


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PRIMARY EXAMINER